जिल्हा परिषदेतील गट-क संवर्गाची रिक्त पदे भरण्याबाबत सुधारीत सूचना.

महाराष्ट्र शासन
ग्राम विकास विभाग
शासन शुद्धीपत्रक क्रमांकः संकीर्ण २०२३/प्र.क्र.६७/आस्था ८

बांधकाम भवन, मर्झबान पथ, फोर्ट,
मंत्रालय, मुंबई- ४०० ००१
दिनांक: १५ मे, २०२३

वाचा -

१. शासन परिपत्रक, ग्रामविकास विभाग क्रमांक संकीर्ण २०२३/प्र.क्र.६७/आस्था ८, दिनांक ९ मे, २०२३

शासन शुद्धीपत्रक:

उपरोक्त संदर्भाधिन शासन परिपत्रकामध्ये जिल्हा परिषदेतील गट-क संवर्गाची रिक्त पदे भरण्याबाबत सूचना निर्गमित करणेत आलेल्या आहेत. त्यामधील परिशिष्ठ "ब" मध्ये ज्या संवर्गासाठी तांत्रिक प्रश्न विचारले जाणार आहेत, त्याची काठिण्य पातळी (दर्जा) समजून येणेसाठी व उमेदवारांच्या सुलभ संदर्भासाठी अभ्यासक्रम निश्चित करण्यात आलेला आहे. यासाठी प्रकार "अ" "ब-१" "ब-२" व "क" नमूद करणेत आलेले आहेत. त्यातील प्रकार "क" मध्ये १७ तांत्रिक संवर्ग नमूद असून कनिष्ठ आरेखक, कनिष्ठ यांत्रिकी व यांत्रिकी या ३ संवर्गाचा अभ्यासक्रम नमूद करणेत आलेला नाही. त्यातील प्रकार "क" मध्ये कनिष्ठ आरेखक, कनिष्ठ यांत्रिकी व यांत्रिकी या ३ संवर्गाचा अभ्यासक्रम सोबत जोडलेल्या परिशिष्ठ "ब" मध्ये नव्याने समाविष्ठ करणेत येत आहे.

सदर शासन परिपत्रक महाराष्ट्र शासनाच्या वेबसाईट (www.maharashtra.gov.in) उपलब्ध करण्यात आला असून त्याचा संकेताक **२०२३०५१२१६५४३१०४२०** असा आहे. हा आदेश डिजीटल स्वाक्षरीने साक्षांकित करुन काढण्यात येत आहे.

महाराष्ट्राचे राज्यपाल यांच्या आदेशानुसार व नावाने,

POPAT DATTATRAYA DESHMUKH

Digitally signed by POPAT DATTATRAYA DESHMUKH
DN: c=IN, o=RURAL DEVELOPMENT DEPARTMENT MANTRALYA, MUMBAI, ou=AFFPD2169F, pseudonym=5b90d5159ac9077f596aa25dd1aa1fd2, 2.5.4.20=36d08dd63951edf75de4888bcc5340c2b5c6b24cb1f1dec5a121074e959d601e, postalCode=400001, st=MAHARASHTRA, serialNumber=d34461bcbf5919f057597f089a0fabc7a2501d2fdedde38b223419a07c9e8610, cn=POPAT DATTATRAYA DESHMUKH
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(पो. द. देशमुख)
उप सचिव, महाराष्ट्र शासन

प्रत,

१) मा. मुख्यमंत्री, महाराष्ट्र राज्य, यांचे खाजगी सचिव

२) मा. उप मुख्यमंत्री, महाराष्ट्र राज्य, यांचे खाजगी सचिव
३) मा.मंत्री (ग्रामविकास), यांचे खाजगी सचिव.
४) मा.मंत्री (सार्वजनिक आरोग्य), यांचे खाजगी सचिव
५) मा.राज्यमंत्री (ग्रामविकास), यांचे खाजगी सचिव
६) मा. मुख्य सचिव महाराष्ट्र राज्य.
७) अप्पर मुख्य सचिव, ग्राम विकास विभाग, मंत्रालय, मुंबई
८) अतिरिक्त मुख्य सचिव,सामान्य प्रशासन विभाग, मंत्रालय, मुंबई
९) अप्पर मुख्य सचिव (मा.व तं.), सामान्य प्रशासन विभाग, मंत्रालय, मुंबई
१०) प्रधान सचिव (लेवको), वित्त विभाग, मंत्रालय, मुंबई
११) प्रधान सचिव (विसु), वित्त विभाग, मंत्रालय, मुंबई
१२) प्रधान सचिव, सार्वजनिक आरोग्य विभाग, गो.ते. रुग्णालय, मंबई
१३) विभागीय आयुक्त, विभागीय आयुक्त कार्यालय (सर्व)
१४) जिल्हाधिकारी (सर्व)
१५) मुख्य कार्यकारी अधिकारी, जिल्हा परिषद (सर्व)
१६) उप आयुक्त (आस्थापना), विभागीय आयुक्त कार्यालय (सर्व)
१७) उपमुख्य कार्यकारी अधिकारी, (सा.प्र.वि.), जिल्हा परिषद, (सर्व)
१८) जिल्हा समाज कल्याण अधिकारी (सर्व)
१९) जिल्हा कौशल्य विकास, रोजगार व उद्योजकता मार्गदर्शन अधिकारी, (सर्व)
२०) जिल्हा सैनिक कल्याण अधिकारी (सर्व)
२१) जिल्हा आरोग्य अधिकारी (सर्व)
२२) निवडनस्ती, कार्यासन आस्था-८.

परिशिष्ट "ब": संवर्गनिहाय अभ्यासक्रम

प्रकार - "क"
(खाली नमूद केलेल्या संवर्गासाठी तांत्रिक अभ्यासक्रमाचा दर्जा नमूद केलेला आहे.)

संवर्ग - १) कनिष्ठ आरेखक
२) कनिष्ठ यांत्रिकी
३) यांत्रिकी

१. कनिष्ठ आरेखक

- **तांत्रिक अभ्यासक्रम**

Importance of B.I.S.

- Introduction of Code for practice of Architectural and Building Drawings (IS: ९६२-१९८९, SP-४६:२००३).
- Layout of drawing. Lines, Lettering, Dimensioning.
- Knowledge of different types of scale. Principle of R.F.

Materials:-

- Stones :-characteristics, types & uses.
- Bricks :- Manufacturing, characteristics of good bricks, types, uses and hollow bricks.
- Lime :- characteristics, types, manufacturing & its uses.
- Pozzolanic :- characteristics, types & uses.
- Cement :- Manufacturing, characteristics, types, uses & test of good cement.
- Sand :- characteristics, types & uses.
- Clay Products :- types, earthenware, stoneware, porcelain, terracotta, glazing.
- Mortar & Concrete :- Types, uses, preparation, proportion, admixtures and applications.
- Timber :- Types, Structure, disease & defects, characterstic, seasoning, preservation & utility.
- Alternative material to Timber, Plywood, Block board, Particle board, Fireproof reinforced plastic (FRP), Medium density fireboard (MDF) etc.
- Tar, bitumen, asphalt :- Properties, application and uses.

Different types of projection views: Orthographic, Isometric, Oblique and Perspective.

Protective materials :-—

- Paints :- characteristic, types, uses.
- Varnishes :- characteristics and uses.

- Metal :- characteristic, types, uses.
- Plastics :- characteristic, types, uses.

Building Construction :-

- Sequence of construction of a building.
- Name of different parts of building.
- Stone masonry:- Terms, use and classification.
- Principle of construction, composite masonry.—
- Strength of walls, Strength of masonry.

Brick masonry - principles of construction of bonds. Tools and equipments used.

Building Construction :- Foundation :-

- Purpose of foundation
- Causes of failure of foundation
- Bearing capacity of soils
- Dead and live loads
- Examination of ground
- Types of foundation
- Drawing of footing foundation setting out of building on ground excavation, Simple machine foundation

Building Construction :-

- Types of shoring and scaffolding in details.
- Types of Underpinning and Timbering in detail

Treatments of building structures :-

- DPC Sources and effects of dampness
- Method of prevention of dampness in building
- Damp proofing materials - properties, function and types.
- Anti-termite treatment - objectives, uses and applications.

Arches :- Technical terms:- types , centring

Lintel :- types, wooden, brick, stone, steel & RCC.

Chajjahs :- characteristics, Centring & Shuttering

Carpentry joints :- terms, classification of joints, Uses, types of fixtures , fastenings.

Doors :-Parts, Location, standard sizes, types.

Windows :- types.

Ventilators :- purpose -types.

Electrical Wiring :-

- Safety precaution and elementary first aid.
- Artificial respiration and treatment of electrical shock
- Elementary electricity.—

- General ideas of supply system.
- Wireman◦s tools kit. Wiring materials. Electrical fittings.
- System of wirings. Wiring installation for domestic lightings.

Floors - Ground floor & upper floor- Types.

- Flooring- materials used types.

Stairs :- Terms. Requirements,

- Planning and designing of stair and details of construction.
- Basic concept of lift and Escalator

Roofs & Roof coverings: -— purposes, Elements, Types, Flat, pitched.

- Truss-king post, queen post, mansard, bel-fast, steel, composite.
- Roof & coverings - objectives, types & uses.

Surveying:-

- Introduction, History and principles of chain survey.
- Instrument employed.
- Use, care, maintenance and common terms.
- Classification, accuracy, types.
- Main divisions (plane & geodetic).
- Chaining.
- Speed in field and office work.
- Knowledge of Mouza Map.
- Compass survey:-Instrument and its setting up
- Bearing and each included angle of close traverse.
- Local attraction.
- Magnetic declination and its true bearing.
- Precaution in using prismatic compass.

Plane table survey:-

- Instrument used in plane table survey
- Care and maintenance of plane table

Levelling :-

- Auto level , dumpy Level, Tilting Level - introduction, definition
- Principle of levelling.
- Levelling staffs, its graduation & types.
- Minimum equipment required
- Types, component / part and function.
- Temporary and permanent adjustment, procedure in setting up.
- Level& horizontal surface. Datum Benchmark, Focussing& parallax
- Deduction of levels / Reduced Level.

- Types of levelling, Application to chain and Levelling Instrument to Building construction.
- Contouring ;-Definition, Characteristics, Methods.
- Direct and Indirect methods
- Interpolation of Contour, Contour gradient , Uses of Contour plan and Map.
- Knowledge on road project.

Theodolite survey :-

- Introduction.
- Types of theodolite.
- Uses, Methods of Plotting.
- Transit vernier theodolite.
- Terms of transit theodolite.
- Fundamental line of theodolite.
- Adjustment of theodolite.
- Checks, Adjustment of errors.
- Open and closed traverse and their application to Engineering Problems.
- Vernier scale- types.
- Measurement of horizontal angle.
- Measurement of vertical angle
- Adjustment of a close traverse.
- Problems in transit ,theodolite-departure, latitude, northing and easting

Building :-

- Principle of planning
- Objectives & importance.
- Function& responsibility.
- Orientation.
- Local building Bye-Laws as per ISI code.
- Lay out plan & key plan.
- Submitted in composition of drawing.
- Provisions for safety.
- Requirement of green belt and land.

Computer aided drafting :-

- Operating system, Hardware& software.
- Introduction of CAD.
- Its Graphical User Interface.
- Method of Installation.
- Basic commands of CAD.

- Knowledge of Tool icons and set of Toolbars.
- Knowledge of shortcut keyboard commands.

Building Planning :-

- Economy & orientation.
- Provision for lighting and ventilation.
- Provision for drainage and sanitation.
- Types of building.
- Planning & designing of residential , public and commercial building

Prefabricated Structure:

- Preparation.
- Method of construction, assembling.
- Advantages & disadvantages.

३D modelling concept in CAD

- ३D coordinate systems to aid in the construction of ३D objects
- Knowledge of shortcut keyboard commands.
- Parks *&* play ground-Types of recreation, landscaping. etc

Concepts of design of earthquake resisting buildings-

- requirements resistance , safety, flexible building elements, special requirements, base isolation techniques.

Reinforced cement concrete structure:-

- Introduction to RCC uses.
- Materials - proportions
- Form work
- Bar bending details as per IS Code.
- Reinforced brick work

Materials used for RCC :-

- Construction.
- Selection of materials - coarse aggregate, fine aggregate, cement water and reinforcement.
- Characteristics.
- Method of mixing concrete - machine mixing and hand mixing.
- Slump test.
- Structure - columns, beams, slabs - one-way slab & two-way slab.
- Innovative construction.
- Safety against earthquake.
- Grade of cement, steel- behaviour and test.
- Bar-bending schedule.

- Retaining wall.
- R.C.C. Framed structure.

Steel structures :-

- Common forms of steel sections.
- Structural fasteners, Joints.
- Tension & compression member.
- Classification, fabrication.
- Construction details.

House drainage of building :-

- Introduction.
- Terms used in PHE.
- Systems of sanitation.
- System of house drainage.
- Plumbing, sanitary fittings, etc.
- Types of sewer appurtenance.
- Systems of plumbing.
- Manholes & Septic tank.
- Water treatment plant
- Sewage treatment plant

Roads :-

- Introduction.
- History of highway development.
- General principles of alignment.
- Classification and construction of different types of roads,
- Component parts.
- Road curves, gradient.
- Curves-types, designation of curves.
- Setting out simple curve by successive bisection from long chords.
- simple curve by offsets from long chords.
- Road drainage system.

Bridges & Culvert :-

- Introduction to bridges.
- Component parts of bridge.
- Classification of culverts.
- IRC loading.
- Selection of type and location.
- Factors governing the ideal site.

- Alignment of bridge.
- Foundation -selection- caisson.
- Coffer dam- types.
- Types of super structure.
- Substructure - piers, abutments, wing walls.
- Classification of bridge.
- Tunnels- rules used for the sizes of different members.

Railways :-

- Permanent way
- Rail gauges, Functions, Requirements, Types, Sections, Length of rail.
- Welding of rail, wear of rail.
- Coning of wheels, hogged rail, bending of rail, creep of rail.
- Causes and prevention of creep.
- Sleeper and ballast- function, types, requirement, materials, rail.
- Fixtures, Fastenings and plate laying in rail.
- Joints-types, fish plate, fish bolt-spikes, chairs and keys-bearing plate, block elastic, base plate.
- Anchors and anti- creepers.
- Construction of permanent ways.
- Railway station and yard

Irrigation Engineering :-

- Terms used in irrigation.
- Hydrology like duty, delta, base period, intensity of irrigation.
- Hydrograph, peak flow, run off, catchment area, CCA, corps like, rabi, kharif etc.
- Storage, diversion head work -characteristics and types.
- Reservoir -types of reservoirs, i.e., single purpose and multi- purpose, area, capacity and curves of reservoir.
- Dams, weir & barrages- types purposes.
- Hydro electric project like Forebay, Penstock, Turbines, Power house, etc.
- Canals- classification and distribution system, canal structures.
- Types of cross drainage works like Aqueduct, Super passage, Syphon, Level crossing, inlet and outlet, etc.

Estimating and Costing :-

- Introduction.
- Purpose and common techniques.
- Drawing of construction. •
- Measurement techniques.

- Estimate-necessity, importance, types -approximate and detailed estimate-main and sub estimates, revised, supplementary, maintenance / repair estimate - taking off quantities- method
- Rate analysis of typical items and their specifications.
- Labour and materials.
- Govt. Schedule of rate.
- Estimating of irregular boundaries by trapezoidal and Simpsons formula.

Total Station :- -

- Introduction.
- Components parts, accessories used.
- Characteristics, features.
- Advantages and disadvantages.
- Principle of EMD.
- Working and need.
- Setting and measurement.
- Electronic, display & Data reading.
- Rectangular and polar co- ordinate system.
- Terminology of open and closed traverse

GPS (Global Positioning System) :-

- Introduction of GPS system.
- Co- ordinate and time system.
- Satellite and conversional geodetic system.
- GPS. Signal, code, and biases
- Role of TRANSIT in GPS development
- GPS segment organisation.
- GPS survey methods.
- Basic geodetic co-ordinate.
- Ground support equipment, signals.
- Tracking devises & system.

Time measurement and GPS timing.

२. कनिष्ठ यांत्रिकी

- तांत्रिक अभ्यासक्रम
  - Marking Tools – Scriber, Divider, Punch, Hammer
    Measuring Tools – Surface Gauge, V Block, Micrometer, Vernier Caliper, Try Square, Angle Plate, Surface Plate
    Gauges – Sine Bar, Slip Gauges, Limit Gauges, Feeler Gauges, Thread Gauges, Taper Gauges, Screw Pitch Gauges
  - Bench Vice, Hacksaw, Chisel – Types and Uses
    File – Specification
    Bench Grinder – Grinding Wheel
    Tap And Die, Types of Screws
  - Fasteners – Nut and Bolt, Screws, Locking Devices, Washers, Keys
    Spanners, Wrenches, Screw Drivers, Pliers, Allen Keys
    Scraper – Physical & Machine Properties
  - Power Transmission– Pulley, Wire Rope, Drive
    Gear – Types, Function, Gear Terminology
    Bearing Types and Application
    Coupling – Types and Applications
  - Pipe & Pipe Fitting – Colour Code
  - Coolant and Lubrication – Types, Properties, Application, Storage, Handling, Seals
  - Basic Electrical – Study of Basic Electrical Voltage, Current, Working of Solenoid, Inductors, Motors, Generator
  - Machine Foundation – Types, Location and Excavation Lifting Equipment
  - Maintenance – TPM, Autonomous, Routine, Breakdown, Retrieval Data from Machine Manual Geometric Test and Inspection Method, Section Inspection, Visual Inspection, Colour Code
  - Hydraulics And Pneumatics – Principles, Pascal◦s Law, Components
    १. Control Valves – Pressure Control Valve, Direction Control Valve, Flow Control Valve, Check Valve
    २. F.R.L. Unit – (Filter, Regulator, Lubricator)
    ३. Actuators And Motors
    ४. Compressor Components
    ५. Pumps – Gear Pump, Vane Pump, Piston Type Pump, Screw Pump Principle, Construction, Working, Specification, Application
    ६. Selection – Efficiency, Noise, Size, Pressure, Flow Rate, Oil Compatibility, Life Expectancy

- Centrifugal Pump - Function, Working, Principle, Pump Performance and Characteristics, Capitation and Aeration, Preventive and Schedule Maintenance, Troubleshooting In Pump
  Material Handling - Conveyor Belt, Vibratory Screens, Mode of Material Handling
- Inspection - Methods of Equipment Maintenance, Commonly Used Gadgets for Inspection, Concept of Inspection Check List, Conditioning Monitoring (Vibration, Temp, Sound, Lubrication Condition)

३. यांत्रिकी

तांत्रिक अभ्यासक्रम

- Hand & Power Tools -
  १. Marking Material - chalk, Prussian blue
  २. Cleaning tools - scraper, wire brush, emery paper
  ३. Marking Tools - Scriber, Divider, Punch, Callipers
  ४. Hand tools - files, hammer, screw driver, ratchet, spanners, pliers, wrenches, bench vice, c-clamp, Hacksaw, Chisel
- Systems of measurement -
  Micrometers- Outside and depth micrometer, Vernier calipers, Telescope gauges, Dial bore gauges, Dial indicators, straightedge, feeler gauge, thread pitch gauge, vacuum gauge,
- Defects in pump sets - procedure for detection of causes & rectification. Purpose and procedure for balancing of rotor. Procedure to be followed for preventive & scheduled maintenance, planning for spares and other stores
- Drilling machine, Drill bits, Taps and Dies, Screw extractor, Reamers, Fasteners - Nut and Bolt, Screws, Locking Devices, Washers, Key & keyways
- Basic electricity - Electricity principles, Ground connections, Ohm's law, Voltage, Current, Resistance, Power, Energy.
  Voltmeter, ammeter, Ohmmeter
  Basic electronics - Description of Semiconductors, Solid state devices- Diodes, AC motors
- Principle of Compression-ignition engine, differentiate between ४-stroke and २ strokes, C.I engine and S.I Engine.
  Different type of starting and stopping method of Diesel Engine, Technical terms used in engine, Engine specification
- Troubleshooting: Causes and remedy for Engine Not starting - Mechanical & Electrical causes, High fuel consumption, Engine overheating, Low Power

Generation, Excessive oil
consumption, Low/High Engine Oil Pressure, Engine Noise

- Power Transmission- Pulley, Wire Rope, Drive, slings
  Gear - Types, Function, Gear Terminology
  Bearing Types and Application
  Coupling - Types and Applications
- Pumps - its importance for agricultural & industrial applications. Classification of pumps, its prime movers, parts and operation safety.
  Classification of reciprocating pump, construction and operation. Installation technique of reciprocating pump. Tools and equipment required & procedure.
- Hydraulics And Pneumatics - Principles, Pascal◦s Law, Components
  १. Control Valves - Pressure Control Valve, Direction Control Valve, Flow Control Valve, Check Valve
  २. F.R.L. Unit - (Filter, Regulator, Lubricator)
  ३. Actuators And Motors
  ४. Compressor Components
  ५. Pumps - Gear Pump, Vane Pump, Piston Type Pump, Screw Pump Principle, Construction, Working, Specification, Application

६. Selection - Efficiency, Noise, Size, Pressure, Flow Rate, Oil Compatibility, Life Expectancy

- Centrifugal pump & Submersible pump - Construction and operation of pump in series and parallel. Finding out defects and method to recondition, install and test pumps
- Various seals & Gaskets - their use and places of application with advantages.
  Lubrication-types of lubricant use & methods of lubrication.
  Various tools and accessories used in pipe fitting with their details. Use of protecting caps on threads. Pipe fitting technique.
  Procedure to fit flanges & for leak testing.